ADDITIONS TO THE FLORA OF COLOMBIA

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During the first four months of 1944 while the writer was engaged in exploration for sources of rotenone in Colombia, principally in the Eastern Llanos, some opportunity was found for general botanical collecting. Although both time and facilities for this purpose were limited to the extent that somewhat less than 500 numbers were obtained, these collections included a few undescribed plants and several species apparently not so far reported from Colombia. In addition to the two novelties described in the present paper, new species in the genera *Axonopus, Grimaldia, Piper, Calolisianthus* (genus new to Colombia), *Hyptis, Bartsia, Castilleja, Alloplectus* and *Cephaelis* will be described elsewhere by specialists in those groups, and new records for *Lonchocarpus* have already been published (Journ. Wash. Acad. Sci. 37: 111-113. 1947).

Through the kindness of Dr. Armando Dugand, Director of the Institute of Natural Sciences, Bogotá, the Herbario Nacional Colombiano has been checked for representatives of the sixteen species herein first reported from Colombia. Four of the species were found to be already represented there, as indicated by the citations below, but so far as can be determined no reports of their ocurrence in the country have been published.

The plants of the following enumeration were collected, with the exception of *Scleria microcarpa* var. *latifolia* and *Pleurothallis propinqua* which were obtained while exploring for *Cinchona* in December 1943 (the former on the banks of the Magdalena, the latter in the Cordillera Oriental), during four trips in the Orinocan and Amazonian lowlands of eastern and southern Colombia. The first included the area between San Pedro de Arimena on the Río

Meta and San José de Ocuné (*) on the Río Vichada, especially the *llanos* bordering the latter river and the Muco; the second was limited to the vicinity of San Martín, in Meta, about 60 km. south of Villavicencio; the dense *selvas* along the Río Orteguaza below Venecia, in Caquetá, were explored on the third; and the fourth comprised the neighborhood of Leticia, the southernmost point of Colombia, on the Amazon River.

Abbreviations for herbaria in which the cited specimens are deposited are those proposed in the *Index Herbariorum* (Chronica Botanica 5: 143-150. 1939) as follows:

(A) Arnold Arboretum, Harvard University, Jamaica Plain, Mass.
(COL) Herbario Nacional Colombiano, Instituto de Ciencias Naturales, Bogotá, Colombia.
(F) Chicago Natural History Museum, Chicago, Ill.
(GH) Gray Herbarium, Harvard University, Cambridge, Mass.
(MO) Missouri Botanical Garden, St. Louis, Mo.
(NY) New York Botanical Garden, Bronx Park, New York, N. Y.
(US) United States National Herbarium, Washington, D. C.
(USNA) United States National Arboretum Herbarium, Beltsville, Md.

GRAMINEAE

Streptogyne crinita Beauv. Ess. Agrost. 80. 1822.

META: Monte de Caño Camoa, alt. 405 m., 0.5 km. S. W. of San Martín, Feb. 4, 1944, *Herman 11186* (COL, US). Det. Agnes Chase.

Panicum luticola Hitchc., Contr. U. S. Nat. Herb. 22: 485. 1922.

VICHADA: clearing in gallery forest on sand-clay bank of the Río Muco, Cerro de Gallina, alt. 100 m., ca. 20 km. N. W. of San José de Ocuné, Jan. 15, 1944, *Hermann 10944* (COL, US, USNA). Det. Agnes Chase.

CYPERACEAE

Cyperus subnodosus Nees & Meyen, Nova Act. Acad. Nat. Curios. 19: 59. 1843.

(*) This is Odune of the official map of Colombia (Oficina de Longitudes, Bogotá, 2nd. ed. 1939), which is approximately 35 km. southwest of the location there designated as San José de Ocune.

AMAZONAS: sandy shore of the Amazon near mouth of the Río Loretoyacu, alt. 100 m., ca. 70 km. N. W. of Leticia, Apr. 11, 1944, *Hermann 11316* (COL; US). Inflorescence practically destroyed by a smut but the characters separating it from the only other septate-nodose species, *C. articulatus* L. and *C. corymbosus* Rottb., are, fortunately, vegetative. The present collection is a close match with authentic material of *C. subnodosus* in the U. S. National Herbarium.

Bulbostylis lanata (HBK.) Clarke, Illustr. Cyper. 45. 1909.

VICHADA: open llanos along the Río Vichada, alt. ca. 100 m., 5 km. E.N.E. of San José de Ocuné, Jan. 19, 1944, *Hermann 10988* (COL; F; GH; MO; NY; US; USNA).

Scleria scabra Willd., Sp. Pl. 4: 315. 1805.

VICHADA: open, dry sandy llanos along the Río Vichada, alt. 100 m., ca. 18 km. E.N.E. of San José de Ocuné, Jan. 21, 1944 *Hermann 11050* (COL; GH; US; USNA). The cited collection differs from the description of the species given by Dr. E. S. Core in his *American Species of Scleria* (*Brittonia* 2: 99. 1936) in having the lobes of the hypogynium lacerate instead of merely wrinkled and in having a raised, thickened ridge at the summit of the ligule below its appendage. The achenes (white) in this collection often attain a length of 4 mm., instead of merely 3, and in Colombia no individuals were seen in the habitat reported for the species by Dr. Core (woods) but only on open, semi-barren plains.

Scleria tenacissima (Nees) Steud. Syn. Pl. Cyp. 175. 1855.

BOYACA: Orocué, March 1880, "Ex Herb. Bayón in Herb. Bogotá," (US); Orocué, Feb. 27, 1939, *O. Haught 2636* (US).

META: thicket on flood plain of the Río Muco, Caracarate, alt. 200 m., W. of San Pedro de Arimena, Jan. 9, 1944, *Hermann 10928* (COL; F; GH; US; USNA). A vine 14 m. long. clambering over tree-tops 7 m. above ground. Ligules not merely pilose but with long-ciliate margins.

Scleria microcarpa var. **latifolia** Boeck., Linnaea 38: 517. 1874.

SANTANDER: low thicket, bank of Magdalena River, Puerto Wilches, alt. 97 m., Dec. 10, 1943, *Hermann 10887* (COL; GH; NY; US; USNA). This larger and coarser variety of *Scleria microcarpa*, which seems to be sufficiently identified by Boeckler's phrase "*foliis*

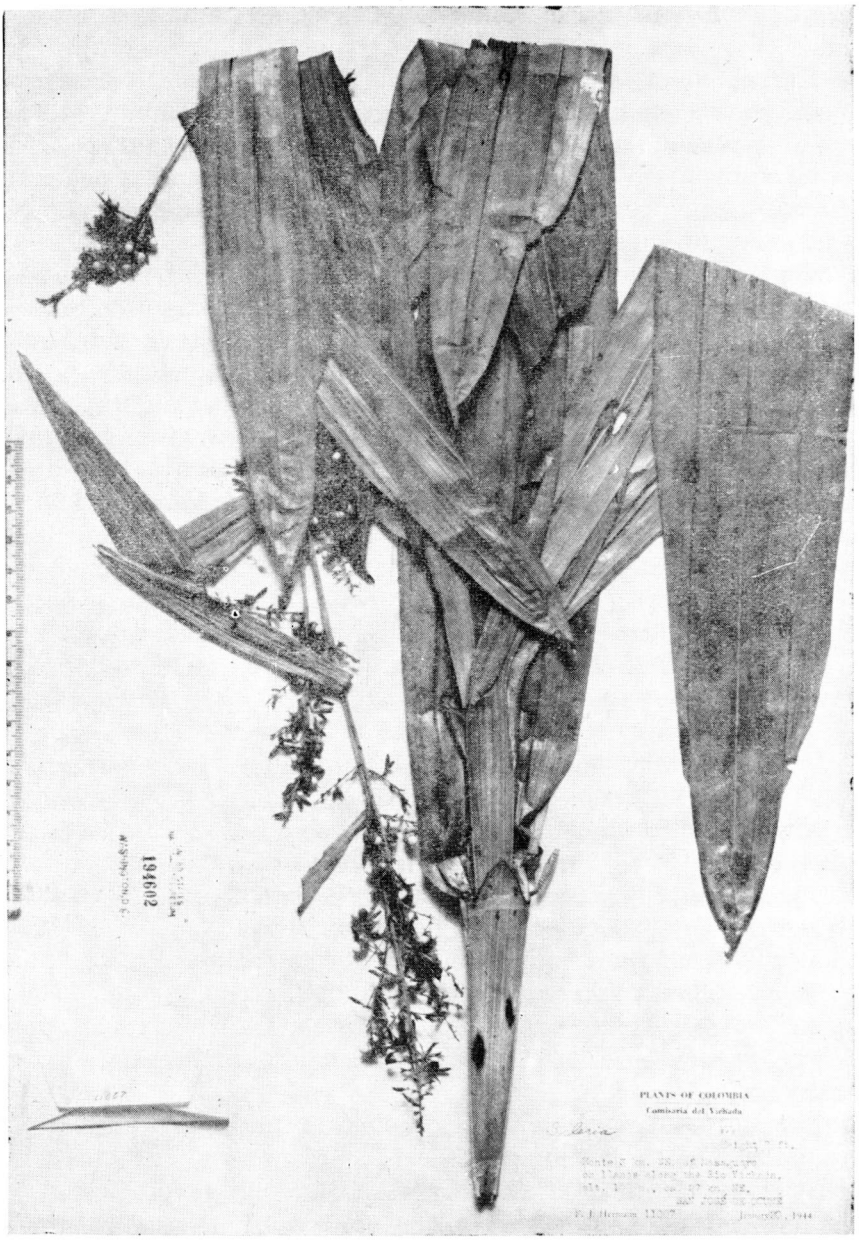
subbipedalibus latis lineari-lanceolatis," appears to be worthy of recognition. In contrast to the typical form of the species in which the width of the leaves varies from 7-12 mm., they average 2 cm. and frequently attain 2.5 cm. in width in var. *latifolia;* the leaf-margins are strongly scabrous, and the wings of the sheaths especially so; the ligule is shorter; the inflorescence is more dense, with much shorter panicle branches and long setaceous bracts; and the hypogynium is dull rather than shining.

Scleria Sprucei Clarke, Kew Bull. Add. Ser. 8: 61. 1908.

VICHADA: monte 3 km. S. E. of Masaguaro, on llanos along the Río Vichada, alt. 100 m. ca. 27 km. E. N. E. of San José de Ocuné, Jan. 20, 1944, *Hermann 11007* (COL; USNA). Previously known only from the type collection from "Bahia, at the mouth of the River Solimoes," Brazil (*Spruce 1516*).

Because of its large achenes the above collection was at first suspected of being an undescribed species allied to *S. macrophylla* Presl. Upon a suggestion by Dr. Core that it might be *S. Sprucei,* however, a sheet of the type collection of that species was borrowed for comparison, through the courtesy of the New York Botanical Garden. Although this isotype lacks fruit, the inflorescence being only in the bud stage, the identity of the very anomalous leaf-blades in both the Brazilian and Colombian collections precludes the likelihood of their representing distinct entities. The usual descriptions of the leaf-blade as "*in parte superiore tertia praemorsim angustata*" and "rather abruptly narrowed toward the tip" appear to the writer to be inadequate characterizations of a feature that must be quite rare, if not unique, in the plant kingdom. The contraction of the leaf-blades occurs from 1/8 to 1/2 their length below the apex and its width is always the distance between the outermost vein and the margin. The Vichada collection differs from Clarke's original description, and from subsequent accounts of the type collection, in having the ligule 15 mm. long (Clark described it as "scarcely 5 mm.", but in the isotype studied it is 8 mm.), the hypogynium greenish straw-colored with minutely and sparsely ciliolate margin rather than dark purple with densely ciliate margin, and globose-ovoid achenes 3.5-4 mm., rather than 2-3 mm. long.

Since the original description of *Scleria Sprucei* may well have been based upon material that was not fully mature, the following



Scleria Sprucei Clarke

(Photo Bur. Plant Industry, U. S. Dept. Agric.)

description of the Vichada collection may prove useful as a supplement to it.

Perennial, with stout rhizomes; culms stout, 1.5-2.5 m. high, sharply triangular, smooth or the angles sometimes minutely and sparsely retrorsely scabrous; leaf-blades linear-oblong, abruptly contracted from 1/8 to 1/2 their length below the gradually acute to acuminate apex (the width of the contraction being the distance between the outermost vein and the margin, — 4 to 15 mm.), 16-45 cm. long, 2.5-7 cm. wide, rigid, 5-7-nerved, smooth except for the margins which are more or less antrorsely scabrous, especially toward the apex; sheaths 3-15 cm. long, loose, from moderately winged to wingless, the wings slightly if at all scabrous; ligule deltoid, 1.5 cm. high, 1.5 cm. wide, rigid; inflorescence terminal and axillary, paniculate, the branches ascending to divaricate; bracts foliaceous; bractlets linear to setaceous, smooth or the margins minutely scabrous; staminate spikelets 3.5-5 mm. long, lanceolate-oblong; staminate scales broadly ovate, abruptly acute, smooth; pistillate scales broadly ovate, glabrous or essentially so, minutely ciliolate; hypogynium large, 2.5 mm. high, 5 mm. wide, greenish straw-colored, at maturity conspicuously exserted beyond the scales, thick, soft and spongy, undulately 3-lobed, the margins minutely ciliolate; achene globose-ovoid, white, smooth and shining, 3.5-4 mm. long, 3 mm. wide; style not conspicuously broadened at the base (0.5 mm. wide or less), not, or only slightly, persistent.

Scleria vichadensis F. J. Hermann, sp. nov. (§ *Ophryoscleria*).

Perennis e rhizomatibus ligneis; culmi 1.5 dm. alti, rigidi; foliorum laminae lineares, 40 cm. longae, 1.5 cm. latae, plicatae, infra ad basim strigosae alioquin glabrae; ligula lineari-lanceolata, 0.6-4 cm. longa, 4-5 mm. lata, plus minusve scabrido-strigosa; hypogynium crateriforme, coriaceum, margine dense ciliata (ciliis 1 mm. longis, puniceis vel porphyreis); achaenium 2.5 mm. diametro, atropurpureum; stylus niger in basim obconicam 0.5-0.6 mm. latam abrupte dilatatus.

Perennial with woody rhizomes; culms 1.5 m. high, stiff, sharply triangular, smooth; leaf-blades linear, averaging 40 cm. long and 1.5 cm. wide, rigid, 5-7-nerved, plicate and frequently splitting along the nerves, attenuate to the blunt apex, strigose ventrally toward the base, otherwise glabrous, the margins retrorsely scabrous, decurrent on the sheaths as broad wings; sheaths 5-10 cm. long, rough-

puberulent ventrally at the mouth; ligule elongate-lanceolate, 0.6-4 cm. long, 4-5 mm. wide, more or less scabrous-strigose; inflorescence terminal and axillary, a narrow panicle with erect branches; bracts foliaceous; bractlets setaceous; staminate scales ovate, acute, the lower tipped with a short awn, glabrous; pistillate scales broadly orbicular-ovate, minutely ciliolate, tipped with a short awn, glabrous; hypogynium crateriform, concealed by the scales, 1.5 mm. high, 3 mm. wide, thin, coriaceous, the margin undulate, densely long-ciliate (the cilia purple to brown, 1 mm. long); achene globose-ovoid, dark purple, smooth and shining, 2.5 mm. high, 2.5 mm. wide; style semi-persistent, black, not constricted but conspicuously broadened to an obconic base (0.5-0.6 mm. wide).

VICHADA: edge of stream in open forest on llanos bordering the Río Vichada, alt. 100 m., ca. 18 km. E. N .E. of San José de Ocuné, Jan. 21, 1944, *Hermann 11043* (COL; USNA — **TYPE**).

META: "Llano de San Martín", Quenane, 250 m., Jan. 1856, *Triana 386* (US); same locality, *Triana 957-5* (COL).

From *Scleria Eggersiana* Boeck. of the West Indies, Central America and Dutch Guiana, to which *S. vichadensis* appears to be most closely related, it differs principally in having the cilia of the hypogynium denser and much longer (1 mm. in length, in *S. Eggersiana* only 0.5 mm.), in its smaller, purple achenes, its black style with much broadened (in *Eggersiana* less than 0.5 mm. wide), but not constricted, base, and in its prolonged ligule (up to 4 cm. long). It approaches also *S. mitis* Berg., particulary in its obconic style-base, but the style-base is broader (0.75 mm.), in that species, and, among other differences, its achenes are smaller, generally white or discolored and the cilia of the hypogynium are but half as long and much less dense.

PONTEDERIACEAE

Pontederia lanceolata Nutt., var. **vichadensis** F. J. Hermann, var. nov.

A varietate typica recedit laminis ovatis vel late ellipticis, perianthio glabro, eglanduloso, 7-9 mm. longo (tubo 4-5 mm. longo, lobis 3-4 mm. longis).

Emersed perennial, 2-4 dm. high; leaves erect, the blades ovate to broadly elliptic, 3.5-12 cm. long, 1.5-7 cm. wide; stipules 6-9 cm. long, truncate, the midrib prolonged into a broad point; upper spathe valve 4 cm. long, loosely sheathing, flaring toward the acute apex;

inflorescence glabrous, 4.5 cm long, 2 cm. wide; perianth glabrous, eglandular, white, with elongate resin-ducts, 7-9 mm. long, its tube 4-5 mm., the lobes 3-4 mm. long; lobes of the upper lip united half way above the base, the central lobe ovate, the lateral elliptic-oblong; lobes of the lower lip free nearly to the base, the lowermost linear-oblong, the lateral broadly elliptic; filaments glandular puberulent and conspicuously marked with dark, elongate resin-ducts; anthers oblong, 0.7 mm. long; style sparsely glandular puberulent; stigma minutely 6-cleft; fruit not seen.

VICHADA: mucky edge of stream in open forest on llanos bordering the Río Vichada, alt. 100 m., c. 18 km. E. N. E. of San José de Ocuné, Jan. 21, 1944, *Hermann 11045* (COL; USNA — **TYPE**).

Differs from typical *Pontederia lanceolata* in its smaller, glabrous, eglandular perianth. The perianth is only 7-9 instead of 12-15 mm. in length, its lobes 3-4 instead of 7-8 mm., its tube 4-5 instead of 5-7 mm. long. The leaf-blades, furthermore, are broader and shorter than even the extreme forms of those of typical *P. lanceolata*.

Orchidaceae

Pleurothallis propinqua Ames, Sched. Orchid. 6: 68. 1923.

NORTE DE SANTANDER: on bark of tree in second-growth forest, alt. 2940 m., Cordillera Oriental, S. of Abrego, Dec. 19, 1943, *Hermann 10918* (Botanical Museum, Cambridge, Mass.; COL). Det. C. Schweinfurth, who reports it as new to South America.

Leguminosae

Tephrosia rufescens Benth., Linnaea 22: 513. 1849.

META: grassy plain bordering airfield, alt. 405 m., 0.5 km. N. E. of San Martín, Feb. 1, 1944, *Hermann 11159* (COL; US). Det. E. P. Killip.

Euphorbiaceae

Mabea nitida Benth., Benth., Kew Journ. 6: 367. 1854.

VAUPES: Río Cuduyarí orillas, afluente del Vaupés, 200 m., Sept. 15, 1939, *Cuatrecasas 6842* (COL) Det. J. Ewan;—orillas del Río Vaupés, cerca de Mitú, 200 m., Oct. 17, 1939, *Cuatrecasas 7238* (COL; US) Det. J. Steyermark;—bocas del Carurú (afluente derecho del Vaupés), ori-

lias del río y del caño, 240 m., Sept. 26, 1939, *Cuatrecasas 7038* (COL; US) Det. J. Steyermark.

VICHADA: gallery forest along the Río Muco, Cerro de Gallina, alt. 100 m., ca. 20 km. N. W. of San José de Ocuné, Jan. 15, 1944, *Hermann 10943* (A; COL; US; USNA) Det. L. Croizat.

None of the Colombian material had been seen by Dr. Croizat at the time of his discussion of the genus as known from Colombia in Caldasia 2 (9): 358-362. Jan. 6, 1944.

PASSIFLORACEAE

Passiflora pyrrhantha Harms, Notizbl. Bot. Gart. Berlin 9: 777. 1926.

META: dense woods, Monte de Machadero, Ocoa, alt. 498 m., 4 km. S. E. of Villavicencio, Jan. 28, 1944, *Hermann 11120* (US). A vine 3 m. in length, almost leafless at anthesis; flowers completely deep orange-flame colored. Det. E. P. Killip. Previously known only from the type locality in Loreto, Peru (Killip: American Species of Passiflora. Field Mus. Pub. Bot. 19: 561. 1938).

LYTHRACEAE

Cuphea repens Koehne in Mart. Fl. Bras. 13 (2): 251. 1877.

BOYACA: Llanos Orientales near Orocué, 140 m., March 27, 1939, *O. Haught 2706* (COL).

META: opening in woods on flood plain of the Río Muco, Caracarate, alt. ca. 200 m., W. of San Pedro de Arimena, Jan. 9, 1944, *Hermann 10927* (COL; US; USNA). Forming extensive mats in grassy forest openings.

MELASTOMACEAE

Ossaea heteronervis (Naud.) Triana, Trans. Linn. Soc. 28: 146. 1871.

AMAZONAS: flooded jungle bordering the Río Hamacayacu (tributary of the Amazon), alt. 100 m., ca. 65 km. N. W. of Leticia, Apr. 10, 1944, *Hermann 11307* (COL; NY). A shrub 2 m. high, with reddish-pink flowers. Det. H. A. Gleason.

RUBIACEAE

Isertia alba (Schum. & Krause) Standl., Field Mus. Pub. Bot. 8: 346. 1931.

META: Villavicencio, 450 m., Feb. 1856, *Triana 3311-3* (COL).

TOLIMA: Fálan, cañón del Río Gualí, camino de Fresno a Fálan, descendiendo, 1120-1700 m., Dec. 5, 1939, *H. García-Barriga 8316* (COL).

CAQUETA: Cordillera Oriental, vertiente oriental, Sucre, 1000-1300 m., Apr. 4, 1940. *Cuatrecasas 9104* (COL); thicket at edge of forest near mouth of Quebrada Las Dalias on the Río Orteguaza, La María (Hacienda de Ramón Achiardy), alt. 400 m., 23 km. S. E. of Venecia, March 7, 1944, *Hermann 11235* (F). A tree 4 m. high; flowers white, very fragrant. Det. P. C. Standley.

Psychotria rhodophylla Standl., Field Mus. Pub. Bot. 8: 194. 1930.

SANTANDER: between Carare and Magdalena Rivers, vicinity of Puerto Berrío, 100-700 m., June 17, 1935, *O. Haught 1794* (COL).

CAQUETA: Florencia, 420 m., Dec. 1930, *H. Pérez-Arbeláez s. n.* (COL); low forest near mouth of Quebrada Las Dalias on the Río Orteguaza, La María (Hacienda de Ramón Achiardy), alt. 400 m., 23 km. S. E. of Venecia, March 6, 1944, *Hermann 11224* (COL; F). Det. P. C. Standley.

Rudgea crassiloba (Benth.) Robinson, Proc. Amer. Acad. 45: 408. 1910.

VICHADA: dense forest on llanos, Bopimí, alt. 100 m., ca. 14 km. N. W. of San José de Ocuné, Jan. 25, 1944, *Hermann 11108* (COL; F; G; NA). A tree 7 m. high; flowers white. Det. P. C. Standley.